

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Part 2 of the Commission's Rules	)	
to Allocate Spectrum Below 3 GHz for Mobile	)	
and Fixed Services to Support the Introduction of	)	ET Docket No. 00-258
New Advanced Wireless Services, Including Third	)	
Generation Wireless Systems	)	
	)	
Amendment to Parts 1, 2, 27 and 90 of the	)	
Commission's Rules to License Services in the	)	
216-220 MHz, 1390-1395 MHz, 1427-1429 MHz,	)	WT Docket No. 02-8
1429-1432 MHz, 1432-1435 MHz,	)	
1670-1675 MHz, and 2385-2390 MHz	)	
Government Transfer Bands	)	

**PETITION FOR RECONSIDERATION OF  
THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC. AND  
THE NATIONAL ASSOCIATION OF BROADCASTERS**

## **SUMMARY**

In this proceeding, the Commission has failed to address concerns raised by MSTV, NAB, and the Society of Broadcast Engineers (SBE) about the technical feasibility of sharing 2 GHz spectrum between Broadcast Auxiliary Services (BAS) and Department of Defense (DOD) tracking, telemetry, and commanding (TT&C) services. The Commission did not describe the technical parameters of the proposed TT&C services in sufficient detail to enable affected parties and the Commission to adequately evaluate whether spectrum sharing between 2 GHz BAS and TT&C uses would be technically feasible and coordination efforts worthwhile. Ignoring the interference studies the Joint Broadcasters were able to perform based on publicly available information, the Commission simply assumed that available spectrum sharing techniques would enable successful coordination here. In the absence of detailed technical information and concrete evidence that these assumptions are justified, the Commission should not require the parties to spend significant time and expense attempting to coordinate spectrum sharing that may turn out to be impossible.

If sharing does turn out to be impossible, both DOD and broadcasters will suffer for the Commission's error in mandating sharing and coordination efforts without sufficient support. Where coordination proves ineffective, DOD users will have invested significant resources in relocation efforts to no end,<sup>1</sup> thereby frustrating the Commission's goals in adopting the Order. If sharing is attempted nonetheless and DOD TT&C systems cause interference to BAS services, consumers could lose access to valuable electronic newsgathering (ENG) services,

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<sup>1</sup> The Commission has stated that it would "not concur with authorizing operation of any 2 GHz DOD TT&C uplink earth station in the absence of successful coordination between DOD and the affected BAS incumbents." Seventh Report and Order, *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, ET Docket No. 00-258, 19 FCC Rcd 21350 ¶¶ 13, 27 (2004) (*Seventh R&O*).

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either because existing services are degraded or because new BAS stations are precluded from initiating service.

The Joint Broadcasters respectfully request the Commission to reconsider its decision to mandate spectrum coordination and sharing between BAS and TT&C systems in the 2 GHz band until the Commission and all affected parties have had an opportunity to evaluate detailed technical parameters of the proposed TT&C systems and have determined whether effective sharing is possible. Taking the time to conduct this analysis before requiring the parties to undertake spectrum coordination efforts will not delay the anticipated relocation of DOD satellite systems and will promote effective and efficient spectrum usage. We also ask the Commission to facilitate any required coordination efforts by establishing a formal process through which the Commission, NTIA, and the Department of Defense will investigate, with input from the affected parties, whether or not coordination is actually feasible and will define the precise technical parameters to be used for coordinating each TT&C site.

## **TABLE OF CONTENTS**

	<u>Page</u>
BACKGROUND .....	2
ARGUMENT .....	5
I. NTIA MUST BE REQUIRED TO DISCLOSE COMPLETE TECHNICAL PARAMETERS FOR ALL DOD GROUND SYSTEMS DESIGNATED FOR RELOCATION TO THE 2 GHZ BAND .....	6
II. THE COMMISSION FAILED TO CONSIDER STUDIES SHOWING THAT DOD RELOCATION WOULD REQUIRE EXTRAORDINARY COORDINATION AND WOULD RESULT IN EXTENSIVE INTERFERENCE TO INCUMBENT SERVICES.....	6
III. PRUDENT SPECTRUM MANAGEMENT REQUIRES MORE CONCRETE EVIDENCE THAT AVAILABLE SHARING TECHNIQUES WILL BE EFFECTIVE BEFORE SPECTRUM SHARING CAN BE REQUIRED .....	8
IV. THE COMMISSION HAS AMPLE TIME TO EVALUATE FULLY THE TECHNICAL FEASIBILITY OF THE PROPOSED 2 GHZ SHARING ARRANGEMENT .....	9
CONCLUSION.....	10

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The Association for Maximum Service Television, Inc. (MSTV) and the National Association of Broadcasters (NAB)<sup>2</sup> (collectively, Joint Broadcasters) respectfully request the Commission to reconsider its decision in the *Seventh Report and Order (Seventh R&O)* in the above-referenced proceeding to permit U.S. Department of Defense (DOD) satellite-based tracking, telemetry, and commanding (TT&C) services to operate on a co-primary basis with Broadcast Auxiliary Services (BAS) in the 2025-2110 MHz (2 GHz) band. The Commission's decision ignored strong evidence that the proposed TT&C systems would cause unavoidable interference to BAS operations and instead simply assumed that effective techniques could be developed to enable cooperative spectrum sharing. Prudent spectrum management must be based on concrete and reliable scientific and technical information rather than on speculative

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<sup>2</sup> MSTV is a non-profit trade association of local television stations committed to achieving and maintaining the highest technical quality for the local broadcast system. NAB is a non-profit incorporated association of radio and television stations that serves and represents the American broadcast industry.

assumptions. Accordingly, the Joint Broadcasters urge the Commission to reconsider the 2 GHz spectrum sharing arrangement unless and until complete technical parameters of the proposed TT&C operations are disclosed and the Commission and affected parties have the opportunity to evaluate the data and determine whether the proposed spectrum sharing arrangement is feasible and in the public interest. In addition, we ask the Commission to facilitate any required coordination efforts by establishing a formal process through which the Commission, the National Telecommunications and Information Administration (NTIA), and the DOD will investigate, with input from the affected parties, whether or not coordination is actually feasible and will define the precise technical parameters to be used for coordinating each TT&C site.

### **BACKGROUND**

In connection with the Commission's ongoing efforts to make spectrum available for new advanced wireless services (AWS), and consistent with a plan offered by the NTIA, the Commission proposed to relocate DOD TT&C systems from the 1710-1755 MHz band to the 2 GHz band currently used for broadcasters' auxiliary ENG services.<sup>3</sup> Under the proposal, DOD would be able to use the 2 GHz band at 11 earth stations sites on a "co-equal, primary basis"<sup>4</sup> with BAS operations.

The Joint Broadcasters generally have supported the efforts of NTIA and the Commission to identify government spectrum for reallocation to facilitate new wireless services.<sup>5</sup> But the Joint Broadcasters have cautioned both NTIA and the Commission that,

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<sup>3</sup> Fourth Notice of Proposed Rulemaking, *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, ET Docket No. 00-258, 18 FCC Rcd 13235, 13236 ¶ 1 (2003) (Fourth NPRM). The goal of the relocation is to make more spectrum available in the 1755-1850 MHz band to facilitate the introduction of AWS. *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> Joint Broadcasters Comments, ET Docket No. 00-258, at 2 (Aug. 8, 2002) (Joint Broadcasters 2002 Comments).

pursuant to the Commission's rules and footnote US346, the relocation of DOD uses must not constrain the deployment of BAS operations.<sup>6</sup> To ensure that this does not occur, both the Joint Broadcasters and the Commission asked NTIA to disclose the technical parameters of all DOD ground systems designated for the proposed relocation to the 2 GHz band so that their impact on BAS services could be assessed.<sup>7</sup> NTIA maintained that it had not developed the information, but that it would assume the full burden of coordinating DOD earth stations to avoid causing interference to incumbent BAS operations.<sup>8</sup>

Even without detailed technical parameters, the Joint Broadcasters did their best to assess the impact of the proposed relocation based on publicly available data.<sup>9</sup> A combination of studies showed that a surprisingly large number of BAS stations would need to coordinate with each DOD earth station, including some BAS licensees that would need to coordinate with multiple TT&C stations,<sup>10</sup> and that many of the DOD facilities slated for relocation to the 2 GHz BAS band could be expected to cause harmful interference to BAS systems.<sup>11</sup> Based on the studies and the continued lack of detailed technical information from NTIA, the Joint Broadcasters opposed the Commission's proposed relocation of the TT&C earth stations to the

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<sup>6</sup> See Joint Broadcasters 2002 Comments at 8; Joint Broadcasters Comments, ET Docket No. 00-258, at 3 (Nov. 3, 2003) (Joint Broadcasters 2003 Comments). Footnote US346 to the United States Table of Frequency Allocations provides, *inter alia*, that "Federal Government use of the band 2025-2110 MHz by the space operation service (Earth-to-space), Earth exploration-satellite service (Earth-to-space), and space research service (Earth-to-space) shall not constrain the deployment of the Television Broadcast Auxiliary Service." 41 C.F.R. § 2.106.

<sup>7</sup> Joint Broadcasters 2002 Comments at 8; Fourth NPRM, 18 FCC Rcd at 13250 ¶ 27.

<sup>8</sup> *Fourth NPRM*, 18 FCC Rcd at 13250 ¶ 27.

<sup>9</sup> Joint Broadcasters 2003 Comments at 5-10, attachments.

<sup>10</sup> Joint Broadcasters 2003 Comments at 5-7; *Engineering Statement Re: 2 GHz DoD Spectrum Sharing and BAS Coordination Analysis*, Cohen, Dippell and Everist, P.C. (2 GHz Overlap Study), attached to Joint Broadcasters 2002 Comments.

<sup>11</sup> Joint Broadcasters 2003 Comments at 8-10; *Potential Interference from Relocated DOD SATOPS Earth Stations into BAS Receive Stations in Nearby Cities and Associated Future Coordination Issues*, Jeff Binckes Associates, LLC (2 GHz Interference Study), attached to Joint Broadcasters 2003 Comments.

2 GHz band.<sup>12</sup> However, the Joint Broadcasters expressed a willingness to reevaluate their position if: (1) NTIA disclosed detailed information on the technical parameters of the proposed earth stations that would enable broadcasters to make a full and accurate assessment of potential interference to BAS; (2) the detailed assessment showed that coordination between BAS and TT&C services was a realistic possibility; and (3) the Commission placed strict limits on the output power levels of the relocated TT&C systems.<sup>13</sup>

Despite the legitimate and well-supported concerns raised by the Joint Broadcasters, as well as additional data offered by SBE showing that DOD and BAS sharing is not compatible at this time,<sup>14</sup> the Commission adopted the relocation proposal.<sup>15</sup> The Commission “recognize[d] the concerns of the broadcasting community that sharing of [the] band ... will be challenging in some instances,” but asserted that “we are confident that such sharing is feasible ... provided that coordination procedures adequate to the protection of both incumbent BAS stations and DOD TT&C uplink earth stations are imposed.”<sup>16</sup> The Commission cited no evidence to support this conclusion. The *Seventh R&O* did not address either of the studies submitted by the Joint Broadcasters or their concern that the Commission lacked sufficiently detailed technical information from NTIA to evaluate the proposal. The Commission cited a variety of possible coordination techniques, but provided no support, either

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<sup>12</sup> Joint Broadcasters 2003 Comments at 13.

<sup>13</sup> *Id.* at 13-14.

<sup>14</sup> Comments of the Society of Broadcast Engineers, Inc., ET Docket 00-258 (Nov. 3, 2003). SBE noted that despite the vagueness of the *Fourth NPRM*, “based on its research SBE can make some educated guesses about the interference potential of such uplinks.” *Id.* at 2. SBE determined that TT&C systems would pose a “serious interference threat” and that “[b]ecause the interference threat would be one way ... and because of the inherent bureaucracy of the military and the understandable reluctance to share technical and operational details for possible mission-critical uplinks, it is not realistic to expect DOD to ever be capable of the real-time or near real-time frequency coordination that is the life blood of modern ENG operations in the largest and most heavily congested TV markets.” *Id.* at 2, 10.

<sup>15</sup> *Seventh R&O* ¶ 3.

<sup>16</sup> *Id.* ¶ 27.



evidentiary or anecdotal, showing that these techniques are likely to be effective in this case.<sup>17</sup>

Although the Commission has stated that it will not actually approve operation of any 2 GHz DOD TT&C uplink earth station unless there is successful coordination, the *Seventh R&O* requires the parties to undertake complex and potentially expensive coordination efforts without any guarantee of success and requires new BAS stations to accept interference from DOD sites.<sup>18</sup>

### **ARGUMENT**

The Commission has revised the 2 GHz spectrum allocation and established a framework for coordination without knowing the technical parameters of DOD ground systems and without considering evidence in the record that coordination and sharing between BAS and TT&C systems will be impossible. The Commission assumed that sharing is feasible but did not rely on any concrete evidence to reach that conclusion. Requiring spectrum sharing without some certainty that successful coordination is even possible will strain the resources of government and commercial spectrum users, potentially without any resulting benefit to the public. Additionally, new BAS stations will be hindered by having to accept potentially debilitating interference. The better course would be for the Commission first to evaluate fully the feasibility of the proposed 2 GHz band sharing by (1) requiring NTIA to disclose the technical parameters of DOD ground stations, (2) considering fully the evidence concerning the potential for interference and coordination between the incumbent BAS and proposed TT&C uses, and (3) commissioning additional studies as necessary to determine whether the proposed spectrum allocation is feasible. Only if this thorough inquiry shows that effective sharing and coordination are possible should the spectrum be reallocated.

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<sup>17</sup> See *id.* ¶¶ 27, 29.

<sup>18</sup> *Id.* ¶ 27.

**I. NTIA MUST BE REQUIRED TO DISCLOSE COMPLETE TECHNICAL PARAMETERS FOR ALL DOD GROUND SYSTEMS DESIGNATED FOR RELOCATION TO THE 2 GHZ BAND**

At the Joint Broadcasters' request, the Commission asked NTIA to disclose the technical parameters of all DOD ground systems designated for relocation to the 2 GHz band so that their impact on BAS services could be assessed. NTIA was unable to provide the parameters because "the information has not yet been developed."<sup>19</sup> But without this information it is virtually impossible for anyone -- the Joint Broadcasters, the Commission, or NTIA -- to assess with any confidence the impact of the proposed spectrum sharing on incumbent BAS services. The Commission's "confident" conclusion that sharing is feasible is simply unsupportable without the detailed technical information that NTIA has yet to provide. The Commission must reverse its arbitrary decision.

**II. THE COMMISSION FAILED TO CONSIDER STUDIES SHOWING THAT DOD RELOCATION WOULD REQUIRE EXTRAORDINARY COORDINATION AND WOULD RESULT IN EXTENSIVE INTERFERENCE TO INCUMBENT SERVICES**

The Commission did not address the Joint Broadcasters' two studies other than to generally acknowledge the likelihood of interference from DOD uses and to state, without any basis in the record, that effective sharing techniques exist to resolve any interference issues.<sup>20</sup> The studies, however, reveal significant obstacles to successful coordination. The Commission's failure to respond to these studies, or to provide evidentiary support for its conclusion that specific techniques exist to effectively resolve the concerns raised by the studies, is arbitrary and capricious.

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<sup>19</sup> *Fourth NPRM*, 18 FCC Rcd at 13250 ¶ 27.

<sup>20</sup> *Seventh R&O* ¶¶ 27, 29. In discussing the Joint Broadcasters' comments, the Commission did not refer to either of the two submitted studies. *Id.* ¶ 21.

The *2 GHz Overlap Study* compared the coordination zone for each DOD earth station with the boundaries of all television DMAs in the vicinity and then identified, based on information in the Commission's licensing database, the BAS facilities falling within the coordination zones. The study showed that a large number of BAS stations would need to coordinate with each DOD earth station and that some BAS licensees would need to coordinate with multiple TT&C earth stations. A significant number of broadcast stations would need to engage in ongoing, proactive coordination with DOD to prevent interference to their ENG operations. The Joint Broadcasters concluded that DOD relocation would have a significant impact on many BAS licensees in large, congested markets.<sup>21</sup>

The *2 GHz Interference Study* further demonstrated that, assuming operation of the DOD TT&C systems at 100 Watts and 2.5 kW, many of the DOD facilities slated for relocation to the 2 GHz band would cause harmful interference to BAS services. For example, the study showed that the BAS receive site located on Mt. Uncanoonuc in Goffstown, New Hampshire would experience interference anytime the New Boston TT&C station is operational, and under certain circumstances would be completely overloaded and useless. The study concluded that the 11 DOD earth stations designated for relocation would cause harmful interference to nearby BAS systems much of the time.<sup>22</sup>

The *Seventh R&O* did not address the Joint Broadcaster studies at all. Although the Commission reviewed some data provided by SBE and acknowledged the "significant potential for interference,"<sup>23</sup> it asserted without any specific evidence that there were "no

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<sup>21</sup> See *supra* note 10.

<sup>22</sup> See *supra* note 11.

<sup>23</sup> *Seventh R&O* ¶ 29.

insurmountable technical obstacles” to the proposed reallocation and that “sharing techniques currently exist that should enable 2 GHz earth stations to be engineered into the 11 sites without harming existing BAS operations.”<sup>24</sup> This response simply is not supported by the evidence in the record. Instead, the record contains unrefuted evidence that the proposed DOD TT&C operations can be expected to cause unavoidable interference to BAS facilities. Mandating sharing of 2 GHz spectrum in the face of this evidence was reckless and ultimately inconsistent with the Commission’s goals in this proceeding.

### **III. PRUDENT SPECTRUM MANAGEMENT REQUIRES MORE CONCRETE EVIDENCE THAT AVAILABLE SHARING TECHNIQUES WILL BE EFFECTIVE BEFORE SPECTRUM SHARING CAN BE REQUIRED**

The Commission based its decision here on the mere availability of a variety of spectrum sharing techniques such as terrain shielding, pointing antennas out to sea, and time-sharing.<sup>25</sup> However, the Commission cited no specific evidence that any of these techniques are or could be effective in this case.<sup>26</sup> It is not enough simply to assume that some technique will prove effective to enable spectrum sharing here. Requiring broadcasters and DOD to invest significant resources in coordination efforts without some certainty that those efforts will succeed is patently wasteful of both public and private resources and could hinder the parties’ ability to serve their constituencies in the meantime. This approach also threatens to divert time and effort from spectrum allocation strategies that could more effectively accomplish the Commission’s goals in this proceeding. Finally, even if coordination techniques are marginally

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<sup>24</sup> *Id.* ¶ 29; *see also id.* ¶ 27.

<sup>25</sup> *Id.* ¶¶ 12, 29

<sup>26</sup> One technique, time-sharing, raises considerable problems for broadcasters attempting to cover a breaking news story. As the Joint Broadcasters explained, time sharing would present broadcasters with the unpleasant choice between covering a breaking news story with a corrupt news feed, or not covering the story at all. Joint Broadcasters 2003 Comments at 12-13. *See also* SBE comments concerning the impossibility of real-time coordination with DOD users. *Supra* note 14.

successful for existing BAS users, consumers could be deprived of access to new or enhanced services if the DOD interference that new stations are required to accept proves insurmountable.<sup>27</sup>

#### **IV. THE COMMISSION HAS AMPLE TIME TO EVALUATE FULLY THE TECHNICAL FEASIBILITY OF THE PROPOSED 2 GHZ SHARING ARRANGEMENT**

The *Seventh R&O* discounted broadcasters' concerns about interference from TT&C operations in part on the ground that the transition of DOD satellite systems to new spectrum would take several years, by which time BAS incumbents likely will have converted to more robust digital technologies.<sup>28</sup> Again, however, the Commission failed to cite any evidence showing that digital BAS services would be immune to interference from TT&C services.

The Commission should use the time available before TT&C systems are expected to relocate to assess fully the evidence in the record, to obtain additional information as needed, and to conduct the necessary, detailed analysis to determine whether coordination between BAS incumbents and DOD TT&C services is truly feasible. There is plenty of time for the Commission to undertake this analysis. Sharing and coordination should not be required until the record evidence shows that it would be feasible and productive. In addition, the Commission should facilitate any required coordination efforts by establishing a formal process through which the Commission, NTIA, and the Department of Defense will investigate, with input from the affected parties, whether or not coordination is actually feasible and will define the precise technical parameters to be used for coordinating each TT&C site.

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<sup>27</sup> *Seventh R&O* ¶ 27.

<sup>28</sup> *Id.* ¶¶ 30-31.

## **CONCLUSION**

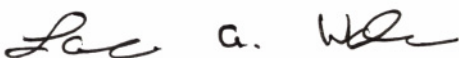
The Commission's efforts to promote efficient spectrum usage must be guided by concrete evidence that proposed spectrum sharing and spectrum usage strategies are technically feasible and effective to accomplish the relevant goals. Here, the Commission not only failed to gather sufficient information and to consider fully the technical feasibility of the proposed spectrum sharing arrangement between DOD TT&C services and incumbent BAS operations, it ignored contrary evidence in the studies submitted by the Joint Broadcasters. Mandating spectrum coordination and sharing in the absence of record evidence that the proposed sharing arrangement will ensure reliable and productive use of the spectrum will drain government and industry resources and frustrate efforts to make effective use of scarce spectrum resources. Accordingly, the Joint Broadcasters ask the Commission to reconsider its decision to mandate spectrum coordination and sharing between BAS and TT&C systems in the 2 GHz band until the Commission and all affected parties have had an opportunity to evaluate detailed technical parameters of the proposed TT&C systems and have determined that effective sharing is possible. Finally, we ask the Commission to facilitate any required coordination efforts by establishing a formal process through which the Commission, NTIA, and the Department of Defense will investigate, with input from the affected parties, whether or not coordination is

actually feasible and will define the precise technical parameters to be used for coordinating each TT&C site.

Respectfully submitted,

NATIONAL ASSOCIATION OF  
BROADCASTERS

ASSOCIATION FOR MAXIMUM SERVICE  
TELEVISION, INC.

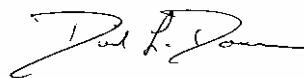


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